Functional Epistasis and Evolutionary Dynamics

Clone Barcodes	Fitness (percent)	95% CI (percent)	Color
AGTAAGACCTCGGGCC	1.05	(0.95,1.10)	
TCTAGCGCGGCCGAAT	1.25	(1.00,1.35)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA	3.35	(3.30,3.30)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_CCGGAAAGAGTACGAC_CTAATGGGCTGATCTG_AGGGGCCGACGGTACC	4.60	(4.55,4.55)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_CCGGAAAGAGTACGAC_CTAATGGGCTGATCTG_AGGGGCCGACGGTACC_GCATGAAGCCGGGAAC_TAGTCCGGCCTGAGAA	5.55	(5.25,5.80)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_GCCTACGAATACAACC_TGAAGCTAGTTAGCGA_CGAGGACTAGAGTCAC	4.20	(3.95,4.50)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_TAAGTGCGTAAGTGAG_GCAATCAAGTCCAACG_TGCTTTACGCGCTCAG	3.90	(3.30,4.30)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_CAGGCACTCACGTTAC_GTCAGAATTCGGAAAA	3.80	(3.65,3.90)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_GATAGATATAGTAAGT_CCCGTGAAGGACATTT_TGAGACTGGCGCGGCA	3.75	(3.55,3.85)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_CGCTTAGTACCCGGAT_AGTCGTTGCGCAAGCG_ACCTCTGTCCACCTCG_CCAAGGAACAACAGGG	3.55	(2.80,4.15)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_TAAGTGCGTAAGTGAG_TCAGGTCAAAAGCCAT_AGACGTCCGATCTATG	4.70	(4.55,4.75)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_CCGGAAAGAGTACGAC_CTAATGGGCTGATCTG_TAGTTAAATTGATGGC	3.85	(3.55,4.10)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_GCCTACGAATACAACC_CGAACGCGGGTGGCAT_AACAGAGATTTGTGCC	3.80	(3.35,4.15)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_GAAGGCGGTTTGGCAT_TGCTGCATTGTGGGAG_TCCAGTAGTGCGTCCG	3.90	(3.30,4.35)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_GTACAGACTGCATGCT_CTATAACAATTGCGGA	3.80	(3.70,3.85)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_GTACAGACTGCATGCT_CTATAACAATTGCGGA_CTCGCCTGTCGTTTTT_CTTTAACGCCCAAAGG_TGATAGAAAGGATCCG	7.40	(6.95,7.75)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_CCGGAAAGAGTACGAC_CTAATGGGCTGATCTG_AGGGTTCCGCAACGTC	4.25	(4.05,4.35)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_CCGGAAAGAGTACGAC_CTAATGGGCTGATCTG_TCGAGTAAAGGAAACG	4.85	(4.70,4.85)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_TTAAGAGTAAGAGAGT_ACCATCAATGCTGCGA_TTGGTTTAATCGAGTC	4.35	(3.80,4.85)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_GCCTACGAATACAACC_GCATGATCACCCAGCC_TTTGCCCCGCACCCTC	3.90	(3.35,4.30)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_GATAGATATAGTAAGT_ATTCGGCTCATAAGGG_ATTCTGGTGGCTAAAC	5.15	(5.00,5.20)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_CCGGAAAGAGTACGAC_CGCTGCTGGACTGTCT_CGGGGTGTAAGCATAT_TGATACCATAAGCTGA	6.00	(5.60,6.25)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_GCCTACGAATACAACC_GTAATCGTCGAATAAA_ATACTCACACTGCTAC	4.20	(3.85,4.40)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_GCCTACGAATACAACC_CCGGCAACCAGCTGCC_AGAATAGGTCAGGGTT	4.45	(4.05,4.65)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_CAGTGCTGCACACGAC_TGCTTTCCAAAGTGTT_TCTGGCCCGGGATTAT_CAGCCGGGTCGTTTTC	4.70	(4.45,4.90)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_GAAGGCGGTTTGGCAT_AAAATGGGATAGGTCC_GCCCTAGTCCTTGAGC	3.90	(3.35,4.35)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_TTAAGAGTAAGAGAGT_ATCAGTGTAAAGCCCA_ACTGTATGCAGCGATC	4.20	(3.85,4.40)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_CAGTGCTGCACACGAC_ACCCGCGGGCCATTTC_ACTGTGAGTACCCGTC	3.65	(3.15,4.00)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_GAAGGCGGTTTGGCAT_TCAACAGGGGGTAGAT_CGGCTTCAAAGTGACC	3.55	(3.25,3.85)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_GAAGGCGGTTTGGCAT_TGCTGCATTGTGGGAG_ACGGGTAGATCGACCA_GTGGGGAGGAAAATTC_TCGCACGAATGCATGA	5.10	(4.60,5.55)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_GCCTACGAATACAACC_GAGTACAAGGCGAAGT_GCAGTCCGCTGGCCCT	4.40	(4.25,4.45)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_GCCTACGAATACAACC_GAGTACAAGGCGAAGT_GCAGTCCGCTGGCCCT_TCCTCTGCCGGGTCAC	4.80	(4.40,5.10)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_TAAGTGCGTAAGTGAG_TGCCGTAATGGGGAAG_GAGACGGATGCCGCCG	3.80	(3.25,4.25)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_GCCTACGAATACAACC_GCATGATCACCCAGCC_TTACCGTATGCCCCTC	3.55	(3.20,3.80)	
TCTAGCGCGGCCGAAT_CTATGAGGTAGAAACA_GATAGATATAGTAAGT_CCCGTGAAGGACATTT_CGATTTGTGGTAAGGC	4.15	(3.45,4.75)	
CCACGCGCGGTACGTC	1.50	(1.40,1.50)	
CCACGCGCGGTACGTC_TGCCACACACGACGAT_TTCACTACCAATCTCC	2.10	(1.80,2.30)	
CCACGCGCGGTACGTC_TGCCACACACGACGAT_TATGTAGATCCAATGG	2.25	(2.10,2.30)	
TAAGGTTCAAAACTCC	1.60	(1.30,1.85)	
TAAGGTTCAAAACTCC_TAGACCTTGCCAACAT_CCTCGTGCTCCGATGG	1.70	(1.35,1.95)	
TTGTCCGTCTTCGAAC	1.40	(1.20,1.50)	
TTGACAACTCCGCCGT	1.25	(1.05,1.35)	
TAGGCGTCGACCGTTA	1.10	(0.70,1.45)	
CGTATGAAACCTGGGG	0.30	(-0.15,0.65)	
CGTATGAAACCTGGGG_GGCAGGTTTTGCGCGA_ATATTCCTAGAAATTC	1.95	(1.60,2.20)	
TCCATTGAGAACAACT	1.55	(1.45,1.50)	
TCCATTGAGAACAACT_TGCACACCCATGAGTA_CGGTCCCAGTTGTATG_CCAATCGCCGAGGCTT	2.50	(2.05,2.80)	
TCCATTGAGAACAACT_TGCACACCCATGAGTA_GGTTGCAAGCATAGAA_GCTGTCGCGTTTCGTT_TTGCGAGGCCCGGAAT_GACTGCTGCACGTTGA	3.35	(3.05,3.55)	
TCCATTGAGAACAACT_TGCACACCCATGAGTA_GGTTGCAAGCATAGAA_GCTGTCGCGTTTCGTT_TTGCGAGGCCCGGAAT_GACTGCTGCACGTTGA_TATCGCCCGAATGATT	7.15	(7.10,7.10)	
TCCATTGAGAACAACT_TGCACACCCATGAGTA_GGTTGCAAGCATAGAA_GCTGTCGCGTTTCGTT_TTGCGAGGCCCGGAAT_GACTGCTGCACGTTGA_TATCGCCCGAATGATT_CTCTGAAGTGTCGGTA_CTCCATACAAATCCCT	7.70	(7.15,8.20)	
TCCATTGAGAACAACT_TGCACACCCATGAGTA_GGTTGCAAGCATAGAA_GCTGTCGCGTTTCGTT_TTGCGAGGCCCGGAAT_GACTGCTGCACGTTGA_TATCGCCCGAATGATT_CTCTGAAGTGTCGGTA_CAACCCTCGCGTGTAC	8.00	(7.20,8.65)	
TCCATTGAGAACAACT_TGCACACCCATGAGTA_GGTTGCAAGCATAGAA_GCTGTCGCGTTTCGTT_TTGCGAGGCCCGGAAT_GACTGCTGCACGTTGA_TATCGCCCGAATGATT_CTCTGAAGTGTCGGTA_TCGACGCGGTCTTCTC_AGTACACTAGACAAGC	9.55	(8.40,10.00)	
TCCATTGAGAACAACT_ACCTAGGTCGTGGGAG_AACGTTAAGTGTTCAT_GTCATTCTAAGGCCGG	2.05	(1.95,2.20)	
TCCATTGAGAACAACT_ACCTAGGTCGTGGGAG_TTGTCCCTAGTTGTGT	2.20	(2.05,2.30)	
CGGCCCTATCGTGAGA	0.50	(0.20,0.80)	
GCAACCCTGCAACTTC	1.45	(1.35,1.50)	
GCAACCCTGCAACTTC_CAAGGAGGGTACTTCG_ACAGCGATGTCCATCC	1.80	(1.55,2.00)	
AAGTAAGCCACTCACC	1.45	(1.25,1.60)	
CCGAACGTCAGTCCCG	0.80	(0.40,1.15)	
AGGCCCTAGGAGACCT	0.85	(0.60,0.95)	
CGAGACGACCAGCTCA_AGTAGATCGCAGATCC	1.15	(0.70,1.55)	
GAATAACGCTTCTTGT_AAAGCATCCACGCGGG	1.05	(0.85,1.20)	
AACGAGGCAGCGTTTT_CTCCTGGACACGTCTG	3.00	(2.75,3.10)	
CGCGGTGGAACGGAGG_CGCAACATGTAAACTT	1.55	(1.50,1.50)	
CGCGGTGGAACGGAGG_CGCAACATGTAAACTT_TCTACGAACGAGTAGC_ATGAAGGTCTACGTTC_AAGCACCAGCGGGTTT_TCGGACTGGGAGCTTG	3.80	(3.55,3.95)	
CGCGGTGGAACGGAGG_CGCAACATGTAAACTT_AACGATGATACGTGGT_AGTATTATGCGACGCC	3.55	(3.50,3.50)	
CGCGGTGGAACGGAGG_CGCAACATGTAAACTT_AACGATGATACGTGGT_AGTATTATGCGACGCC_CGGCGCGGAACTGACA_TCGTCTTCAGAAAGCG_CTGTTGGCCAAAGACC	4.65	(4.00,5.20)	
CGCGGTGGAACGGAGG_CGCAACATGTAAACTT_TGCCGCTCCACCGCTA_GGACTTAAATCACTCG_CGTGAACATGAAATTT	2.90	(2.60,3.10)	
ACAATCCGAATGAAGG_CTTGGAACTGCGTTGA	1.75	(1.60,1.80)	
ACAATCCGAATGAAGG_CTTGGAACTGCGTTGA_GTAGATCTTTGTAGAT_CTGGCAATGTGGCATT	2.35	(1.90,2.70)	
CAAGCCTTCCGGGTCT_GCGTCTTCGTACCACC	0.65	(0.40,0.80)	
GAGAAAACCTAGTGTG_AGCTACCAATTAAGCA	0.85	(0.40,1.20)	
GAAAAGAGTGACGTTT_CATTGGCTCACACAAG	1.30	(1.05,1.45)	
CGAAGCGATGCGTGTA_CGTGTAACCCTCGCAA	1.45	(1.30,1.55)	
CGAAGCGATGCGTGTA_CGTGTAACCCTCGCAA_TCTGTGAGATGGAGTC	2.00	(1.80,2.10)	
TGCGGCATAGTCCTCG_GTAGGTTATGCGGAAG	1.55	(1.40,1.60)	
AACTTGAATAACCATG_GTATTAGGGGCACAAT	1.45	(0.90,1.95)	
GTGCGGACCCCGTGAT_ATCCAAAATCTGTGAC	1.90	(1.70,1.95)	
GTGCGGACCCCGTGAT_ATCCAAAATCTGTGAC_TAGATTCATAGCTGGC	1.90	(1.70,2.05)	
AACCGATGTTGCCCAA_TTCTCGAAGCACGTAG	1.55	(1.20,1.75)	
GTTAACGGCCAGTCAC_CCGTGTACACGGCCAT	1.45	(1.10,1.70)	
TCAGGCCACGTAAGAG_CTGCGAATACGGTGTG	1.45	(1.25,1.50)	
GTTTGGCAAGACAGCA_TGGAGAGGGACTGAGT	3.15	(2.65,3.50)	
GTTTGGCAAGACAGCA_TGGAGAGGGACTGAGT_TTGCAACCAACTATTC_GAACATCCGCGGGAAC	3.35	(2.45,4.10)	
CCTTGACCTCCGACTA_AAATCTTCCTACGCAA	1.85	(1.65,1.90)	
TAGTGGCCTCCCAGAA_CCTCTATCAATAGTTA	1.55	(1.25,1.75)	
TCTGAGCCATAAATAA_TAAGCAGCCACTGATC	1.10	(0.85,1.35)	
GTACCAAAGAGAGCAG_CGGGAGCGCTTGGGTT	1.55	(1.40,1.55)	
ACCCAACAGGTTCAAT_ACCAGAGGAGCGTATT	0.80	(0.55,1.10)	
CAATGGTCTGATCTAT_CAGTATTGTGACGCAT	1.50	(1.15,1.70)	
TGCTAAAAAGATCTAG_TGTGTTCAGGGGGCTG	2.05	(2.00,2.10)	
TGCTAAAAAGATCTAG_TGTGTTCAGGGGGCTG_TGAGGGGGCCGGTTTG_ATTGTCATGCGCTAAC	3.00	(2.65,3.20)	
TTGTCATCAGCGGTAA_CACGACTGGCACTTTT_GACAGCAGTATTGATT	1.75	(1.35,2.00)	
GTTTAATTTAATCGTG_TCCACTGCTTTAAGTG_TAACGAACACGTACGC	2.75	(2.60,2.80)	
GTTTAATTTAATCGTG_TCCACTGCTTTAAGTG_TAACGAACACGTACGC_TAGCCTGAGACTGTAT_CCGGTAGGTGGGACCT	4.15	(4.00,4.15)	
TTATAAACACCCTTCC_CCTGGCGTGTCGAATC_GCAAACCACGATACAT	1.70	(1.35,1.90)	
ACTTCGGGTGTCGTAG_GAACAGTCGAAGAGTA_TGGACATAATGATAGT_ACGGGCTTATCCGGAC	4.10	(3.95,4.15)	
TAAATCTTGTCAGTCA_TCTGGACCCGGTAGAG_AATAAGCAAAGTCAGT_AAGGACATACTGTCCC	3.80	(3.50,4.00)	